Technical Specification

PowerWAVE 9000DPA

10 – 250 kVA (8 - 200 kW) per Cabinet

Three phase input and output
Single / Triple / Upgrade cabinets

- DPA with Safe-Swap Modules (SSM)
  For premium power protection availability
- Low Total Cost of Ownership (TCO)
  Cost saving during entire life-cycle
- Flexibility/Scalability
  Ease of power upgrade, pay as you grow
- Enhanced Serviceability
  Rapid fault recovery
- Link to PowerREPORTER
  Instantaneous fault recognition

Blade Friendly

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POWERWAVE 9000DPA SYSTEM DESCRIPTION

In environments that demand zero downtime, continuous power protection availability is essential. In order to respond to today's dynamic IT and process-related environments that experience daily change through new server technologies, migration and centralisation, resilient and easily adaptable power protection concepts are required.

POWERWAVE 9000DPA (Distributed Parallel Architecture) is the foundation for continuous power protection availability of network-critical infrastructures in enterprise data centres where business continuity has paramount importance and in process control environment where manufacturing continuity is essential.

POWERWAVE 9000DPA is a second generation high-power-density (HPD), leading-edge double-conversion power protection technology that has standardised on a modular component approach which helps speed deployment, improve adaptability and increase system availability while reducing total cost of ownership.

POWERWAVE 9000DPA is a unique on-demand architecture that integrates the power rack, power distribution unit, back-up battery rack and monitoring and management solutions to allow easy selection of optimized configurations.

POWERWAVE 9000DPA provides highest availability, unmatched flexibility and at the same time lowest cost of ownership in IT environments.

This Technical Specification provides detailed technical information on the mechanical, electrical and environmental performance of the POWERWAVE 9000DPA. The POWERWAVE 9000DPA was designed to respond to the most stringent safety, EMC and other important UPS standards.

POWERWAVE 9000DPA is a rack-mountable modular design. It offers 6 types of cabinets and 7 types of modules to accommodate a wide range of power requirements.

Key Features of PowerWAVE 9000 DPA:

• Highest availability modular, Decentralized Parallel Architecture (DPA)	*Near-zero down time*
• High power density (up to 342kW/m^2) small footprint	*Saving expensive floor space*
• Unity output power factor *(KW=KVA)* full power for loads with unity PF	*No de-rating for loads with unity PF*
• Blade-server-friendly power full power from 0.9 lead to 0.8 lag	*No de-rating with leading PF loads*
• Highest efficiency even with partial loads efficiency = 91 - 95.5% for loads 25 - 100%	Energy c*ost saving during UPS-life-cycle*
• Very low input current harmonic distortion THDi THDi = < 2 - 3% for loads of 100 – 25 %	*Gen-set power and installation cost saving*

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MECHANICAL CHARACTERISTICS - MD CABINETS AND MODULES

CABINETS		SINGLE DPA-25	TRIPLE DPA-75	UPGRADE DPA-125
Maximum Load	**kVA**	**25**	**75**	**125**
MD CABINETS				
Accommodates	Max.	1 module 10-25kVA Internal batteries	3 modules 10-25kVA each Internal batteries	5 modules 10-25kVA each External batteries
Dimensions (wxdxh)	mm	550 x 780 x 1650	550 x 780 x 1975	550 x 780 x 1975
Weight of empty cabinet	kg	180	218	171
Weight of cabinet – with modules; without batteries	kg	209 - 215	304 - 323	314 - 346
Colours		Front – Silver RAL 9007 + Black Louvres;		Sides – Graphite Grey

MD MODULES		DPA10	DPA15	DPA20	DPA25
Output Apparent Rated Power	kVA	10	15	20	25
Output Active Rated Power	kW	8	12	16	20
Output Power with load PF = 1	kVA/kW	8 / 8	12 / 12	16 / 16	20 / 20
Dimensions (w x d x h)	mm	483 x 700 x 225 (5U)			
Weight	kg	29	31	33	35
Colour		Front Graphite Grey			

MECHANICAL CHARACTERISTICS - MX CABINETS AND UPS MODULES

CABINETS		SINGLE DPA-50	TRIPLE DPA-150	UPGRADE DPA-250
Maximum load	**kVA**	**50**	**150**	**250**
MX CABINETS				
Accommodates	Max.	1 module 30-50kVA Internal batteries	3 modules 30-50kVA each Internal batteries	5 modules 30-50kVA each External batteries
Dimensions (w x d x h)	mm	730 x 800 x 1650	730 x 800 x 1975	730 x 800 x 1975
Weight of empty cabinet	kg	262	239	205
Weight of cabinet - with modules, w/o batteries	kg	306 - 318	371 - 407	425 - 485
Colours		Front – Silver RAL 9007 + Black Louvres; Sides – Graphite Grey		

MX MODULES		DPA 30	DPA 40	DPA 50
Output Apparent Rated Power	kVA	30	40	45 *
Output Active Rated Power	kW	24	32	40
Output Power with load PF = 1	kVA / kW	24/24	32/32	40/40
Dimensions (w x d x h)	mm	663 x 720 x 225 (5U)		
Weight	kg	44	53	56
Colour		Front Graphite Grey		
* On inverter mode 50 kVA/40 kW; on bypass mode 45 kVA/40 kW				

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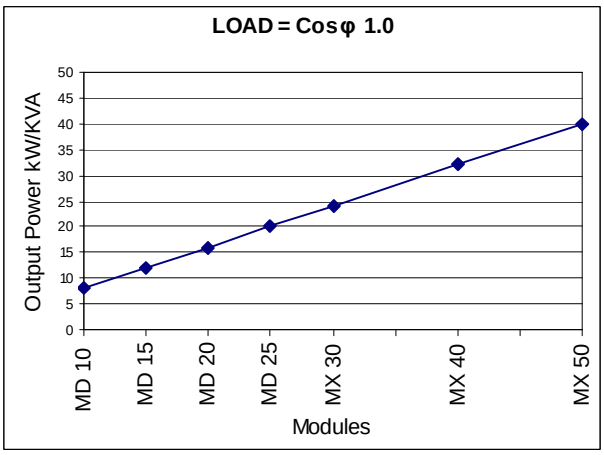
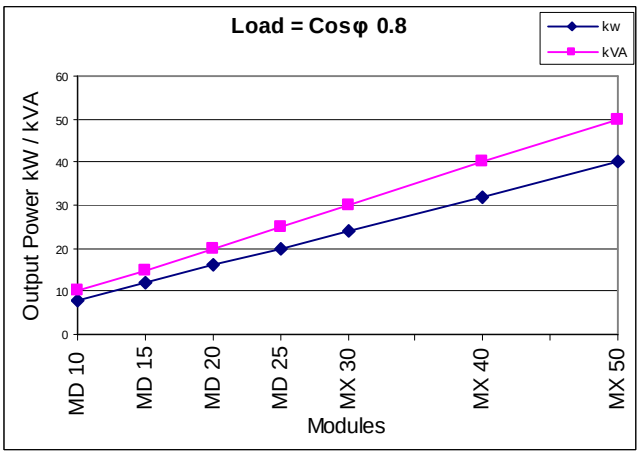
POWER SELECTION TABLE: Power Modules DPA 10 - DPA 50





INPUT CHARACTERISTICS

UPS Module Type		DPA 10	DPA 15	DPA 20	DPA 25	DPA 30	DPA 40	DPA 50
Output rated power per module cosφ 0.8		10	15	20	25	30	40	45 *
Output rated power per module cosφ 1.0		8	12	16	20	24	32	40
Nominal Input Voltage	V	3 x 380/220+N, 3 x 400V/230+N, 3 x 415/240+N						
Input Voltage Tolerance (ref to 3 x 400/230V) for loads in %:	V	(-23%/+15%) 3 x 308/177 to 3 x 460/264 for <100 % load (-30%/+15%) 3 x 280/161 to 3 x 460/264 for < 80 % load (-40%/+15%) 3 x 240/138 to 3 x 460/264 for < 60 % load						
Input Frequency	Hz	35 – 70						
Input Power Factor		0.99 @ 100 % load						
Inrush Current	A	Limited by soft start / Max. In						
Input Current Distortion THDi		Sine-wave THDi = 2 % @ 100% load						
Max. input power with rated output power and charged battery per module (output cosφ = 1.0)	kW	8.5	12.8	17.0	21.3	25.4	33.9	42.9
	A	12.3	18.5	24.7	30.8	36.8	49.1	62.1
Max. input power with rated output power and discharged battery per module (output cosφ = 1.0)	kW	9.3	14.0	18.6	23.3	27.8	37.1	46.9
	A	13.5	20.2	27.0	33.7	40.3	53.7	68.0

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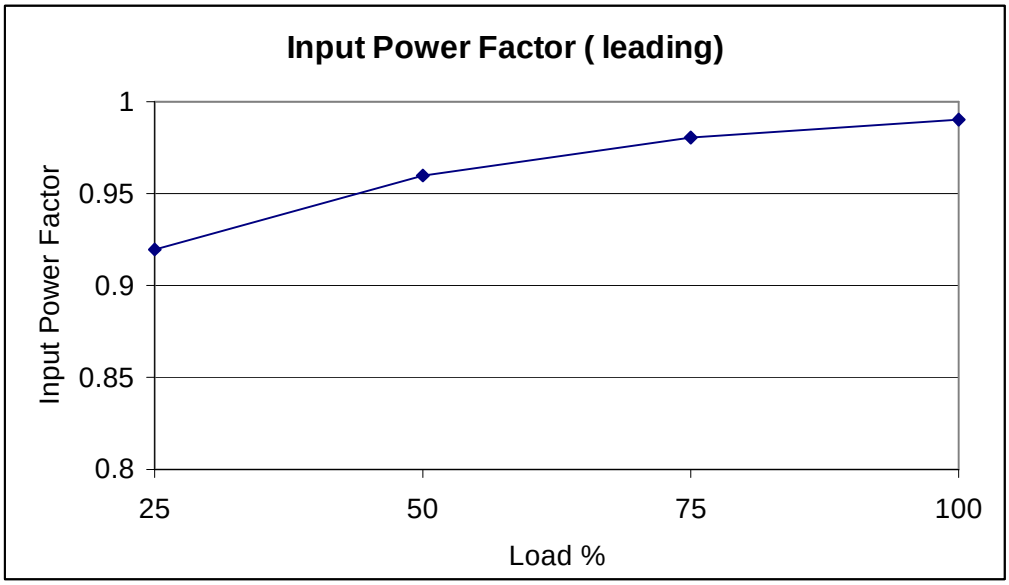
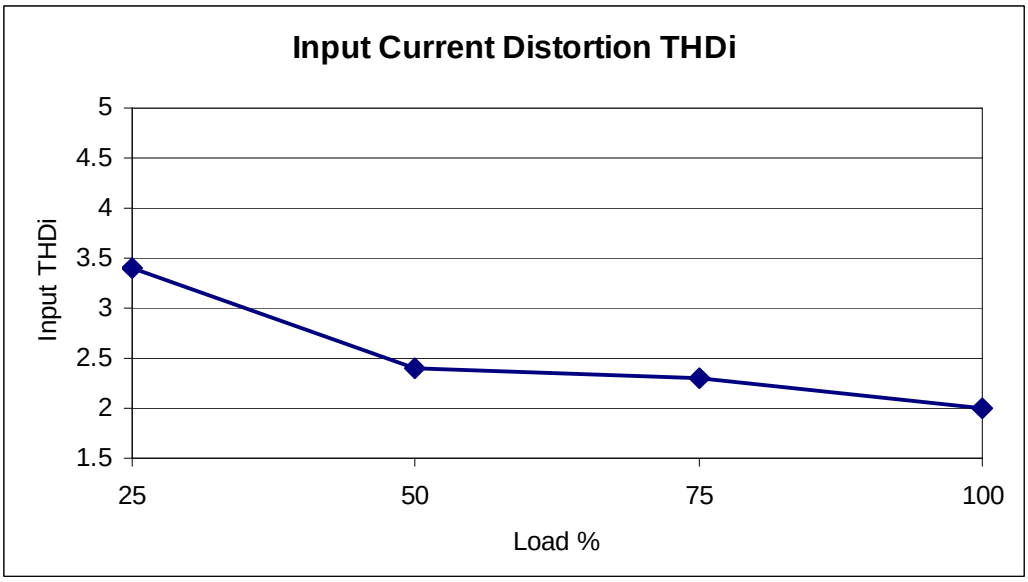
INPUT PF VERSUS % LOAD



INPUT DISTORTION THDi VERSUS % LOAD



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BATTERY CHARACTERISTICS

UPS Module Type		DPA 10	DPA 15	DPA 20	DPA 25	DPA 30	DPA 40	DPA 50
Variable Number of 12V Battery Blocks	30-50	30-50	30-50	30-50	40-50	40-50	40-50	40-50
Maximum Battery Charger Current	A	6A Standard (10A optional)				10A Standard (15A optional)		
Battery Charging Curve		Ripple free ; IU (DIN 41773)						
Temperature Compensation		Standard (temperature sensor optional)						
Battery Test		Automatic and periodical (adjustable)						
Battery Type		Maintenance free VRLA or NiCd						

OUTPUT CHARACTERISTICS

UPS Module Type		DPA 10	DPA 15	DPA 20	DPA 25	DPA 30	DPA 40	DPA 50
Output Rated Power per Module	kVA	10	15	20	25	30	40	45 *
Output Rated Power per Module	kW	8	12	16	20	24	32	40
Output Current In @ cosφ 1.0 (400 V)	A	11.6	17.4	23.2	29	35	46.5	58
Output Rated Voltage	V	3 x 380/220 or 3 x 400/230 or 3 x 415/240						
Output Voltage Stability	%	Static: < +/- 1 Dynamic (Step load 0%-100% or 100%-0%) < +/- 4						
Output Voltage Distortion	%	With Linear Load < +/- 1.5 With Non-linear Load (EN62040-3:2001) < +/- 2						
Output Frequency	Hz	50 or 60						
Output Frequency Tolerance	%	Synchronized with mains < +/- 2 (selectable for bypass operation) or < +/- 4 Free running +/- 0.1						
Bypass operation	%	At nominal input voltage of 3 x 400 V or 190 V to 264 V ph-N +/- 15						
Permissible Unbalanced Load (All 3 phases regulated independently)	%	100%						
Phase Angle Tolerance (With 100 % Unbalanced load)	Deg.	+/- 0 degree						
Overload Capability on Inverter	%	125 % load 10 min. 150 % load 60 sec.						
Output Short Capability (RMS)	A	Inverter : 2 x In for 250 ms Bypass : 10 x In for 10 ms						
Crest - Factor		3 : 1						

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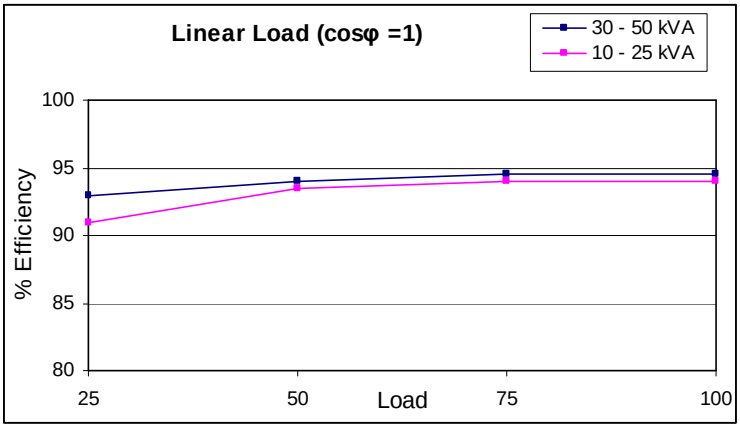
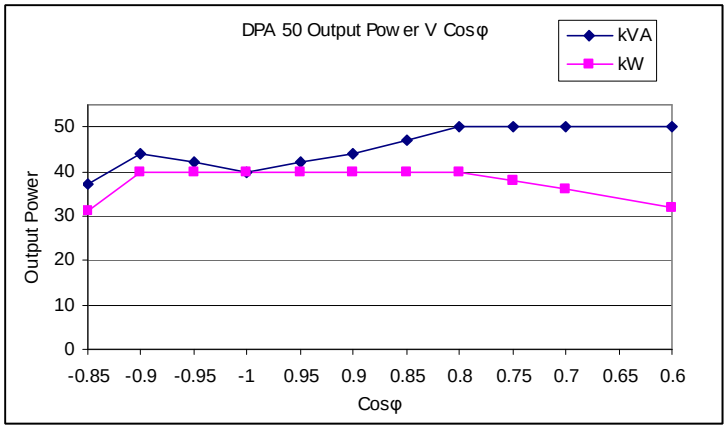
AC – AC EFFICIENCY WITH LINEAR LOAD @ COSΦ1

Efficiency up to 1 % higher with output PF cosφ 0.8
For details refer to Environmental Characteristics



OUTPUT POWER IN KW AND KVA VERSUS COSΦ



LOAD POWER FACTOR DE-RATING TABLE

Load Cosφ		DPA 10		DPA 15		DPA 20		DPA 25		DPA 30		DPA40		DPA 50 *	
		kW	kVA	kW	kVA	kW	kVA	kW	kVA	kW	kVA	kW	kVA	kW	kVA
Cap	-0.85	6.2	7.3	9.3	11	12.3	14.5	15.4	18.1	18.5	21.8	24.6	29	31	36.5
	-0.90	8	8.9	12	13.3	16	17.8	20	22.2	24	26.7	32	35.6	40	44.4
	-0.95	8	8.4	12	12.6	16	16.8	20	21.1	24	25.3	32	33.7	40	42.1
Ind	0.95	8	8.4	12	12.6	16	16.8	20	21.1	24	25.3	32	33.7	40	42.1
	0.90	8	8.9	12	13.3	16	17.8	20	22.2	24	26.7	32	35.6	40	44.4
	0.85	8	9.4	12	14.1	16	18.8	20	23.5	24	28.2	32	37.6	40	47.1
	0.80	8	10	12	15	16	20	20	25	24	30	32	40	40	50 *
	0.75	7.6	10	11.4	15	15.3	20	19.1	25	22.9	30	30.5	40	38	50 *
	0.70	7.2	10	10.8	15	14.5	20	18.1	25	21.7	30	28.9	40	36	50 *
	0.60	6.3	10	9.5	15	12.7	20	15.9	25	19	30	25.4	40	32	50 *

* On inverter mode 50 kVA/40 kW; on bypass mode 45 kVA/40 kW

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ENVIRONMENTAL CHARACTERISTICS

Module Type		DPA 10	DPA 15	DPA 20	DPA 25	DPA 30	DPA 40	DPA 50
Audible Noise with 100% / 50% Load	dBA	55/49	57/49	57/49	57/49	59/51	65/55	65/55
Operation Temperature	°C	0 to 40						
Ambient Temperature for Batteries (recommended)	°C	20						
Storage Temperature	°C	-25 to +70						
Battery Storage Time at Ambient Temperature		Maximum 6 months						
Maximum Altitude (above sea level)	m	1000m (3300ft) without de-rating						
De-rating factor for use at altitudes above 1000m sea level according (IEC 62040-3)		Distance above sea level (m / ft)				De-Rating Factor for Power		
		1500 / 4850				0.95		
		2000 / 6600				0.91		
		2500 / 8250				0.86		
		3000 / 9900				0.82		
Relative Air Humidity		Maximum 95% (non-condensing)						
Accessibility		Totally front accessibility for service and maintenance; no need for side, top or rear access						
Positioning		Minimum 200mm rear space required for cooling						
Input and Output Power Cabling		From the bottom, at the front						
Efficiency AC-AC (at cosφ 1.0 ind) (depending on module power)	%	**Load :** **100** **75** **50** **25** DPA 30-50 : 95.5 95.5 95.0 94.0 DPA 10-25 : 94.0 94.0 93.5 91.0						
Efficiency with Linear Load at cosφ 0.8 Efficiency Non-linear Load (EN 62040-1-1 :2003)		Typically up to 1 % higher than above values Typically up to 1 % lower than above values						
Eco-Mode efficiency at 100% load	%	98						

STANDARDS

Safety	IEC/EN 62040-1-1, IEC/EN 60950-1						
Electromagnetic Compatibility	IEC/EN61000-6-4 (product standard IEC/EN 62040-2 limit A (C2 UPS)) IEC/EN61000-6-2 (product standard IEC/EN 62040-2 criterion A (C2 UPS)) IEC/EN 61004-2, IEC/EN 61000-4-3, IEC/EN 61000-4-4, IEC/EN 61000-4-5, IEC/EN 61000-4-6						
EMC Classifications	DPA 10	DPA 15	DPA 20	DPA 25	DPA 30	DPA 40	DPA 50
Emission Class	C1	C1	C1	C2	C2	C2	C2
Immunity Class	C1	C2	C2	C3	C3	C3	C3
Performance	IEC/EN62040-3						
Product Certification	CE						
Degree of Protection	IP 20						

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COMMUNICATION

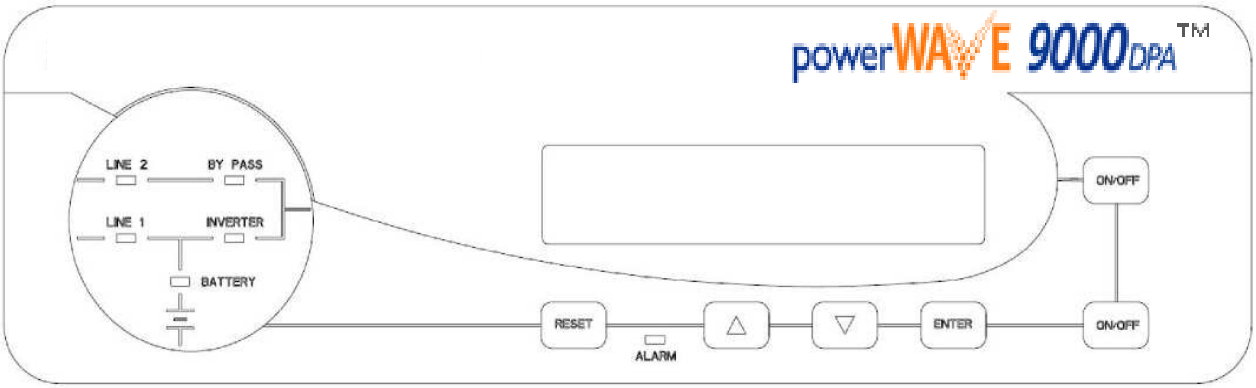
Power Management Display (PMD)	1 LCD display for each module
Serial ports RS232 on Sub-D9	2 per system cabinet + 1 per each module (smart port) For monitoring and integration in network management
USB	1 For monitoring and software management
Customer Interfaces : Inputs DRY PORT X 1	1 Remote shut down [EMERGENCY OFF (normally closed)] 1 GEN-ON (normally open) 2 Programmable customer's inputs (normally open) 1 Temperature sensor for battery control
Customer Interfaces : Outputs DRY PORT X 2 , X 3, X 4	10 voltage free contacts For remote signalling and automatic computer shutdown
Slot for SNMP	SNMP card (optional) For monitoring and integration in network management
Slot for PowerREPORTER	PowerREPORTER card (optional) for premium power protection

POWER MANAGEMENT DISPLAY (PMD)

The user-friendly PMD consists of three sections; the MIMIC DIAGRAM, CONTROL KEYS and LCD that provides all the necessary monitoring information regarding the UPS.

MIMIC DIAGRAM
The mimic diagram serves to give the general status of the UPS. The LED-indicators show the power flow status and in the event of mains failure or load transfer from inverter to bypass and vice-versa the corresponding LED-indicators will change colour from green (normal) to red (warning). The LED's LINE 1 (rectifier) and LINE 2 (bypass) indicate the availability of the mains power supply. The LED's INVERTER and BYPASS if green indicate which of the two are supplying power to the critical load. When the LED-indicator BATTERY is lit it means that the battery due to mains failure is supplying the load. The LED-indicator ALARM is a visual indication of any internal or external alarm condition. At the same time the audible alarm will be activated.

DISPLAY
The 2 x 20 character LCD simplifies the communication with the UPS. The menu driven LCD enables the access to the EVENT REGISTER, or to monitor the input and output U, I, f, P, Autonomy Time and other Measurement's, to perform commands like start-up and shut-down of INVERTER or load transfer from INVERTER to BYPASS and vice-versa. It also serves for the DIAGNOSIS (SERVICE MODE) for adjustments and testing by trained personnel.



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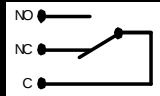
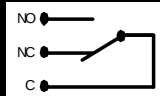
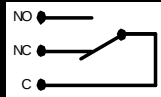
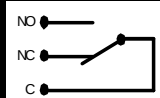
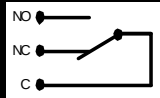
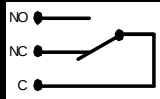
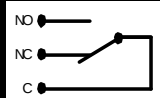
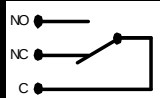
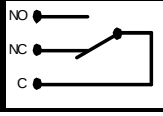
CUSTOMER INTERFACES (Terminals X1…. X4)

CUSTOMER INPUTS DRY PORTS: Terminal block X1
Connection of remote shut down facilities, generator operation, customer specials
CUSTOMER OUTPUTS DRY PORTS: Terminal blocks X2, X3, X4
Provision of signals for the automatic and orderly shutdown of servers, AS400 or automatic building systems
All voltage free contacts are rated 60 VAC maximum and 500 mA maximum
All the interfaces are connected to Phoenix Spring terminals with wires: 0.5 mm^2
Phoenix Spring Terminals (X1… X4) connection

Block	Terminal	Contact	Signal	On Display	Function
X1	X1 / 1		+ 3.3 Vdc		**Remote Shut down**
	X1 / 2		GND		(Do not remove the factory mounted bridge until external Remote Shutdown is connected)
	X1/3		+ 3.3 Vdc		**Generator Operation**
	X1 / 4		GND		(NC = Generator ON)
	X1 / 5		+ 3.3 Vdc		**Customer IN 1**
	X1 / 6		GND		(Function on request, to be defined)
	X1 / 7		+ 3.3 Vdc		**Customer IN 2**
	X1 / 8		GND		(Function on request, to be defined)
	X1 / 9		+ 3.3 Vdc		**Battery Temperature**
	X1 / 10		GND		(battery charger current compensation dependant on battery temperature)
X2	X2 / 1		ALARM	MAINS_OK	Mains Present
	X2 / 2				**Mains Failure**
	X2 / 3				Common
	X2 / 4		Message	LOAD_ON_INV	**Load on Inverter**
	X2 / 5				(Load on Mains bypass)
	X2 / 6				Common
	X2 / 7		ALARM	BATT_LOW	**Battery Low**
	X2 / 8				Battery OK
	X2 / 9				Common
	X2 / 10		Message	LOAD_ON_MAINS	**Load on bypass** (Mains)
X3	X3 / 1				(Load on Inverter)
	X3 / 2				Common
	X3 / 3		ALARM	COMMON_ALARM	**Common Alarm** (System)
	X3 / 4				NO Alarm Condition
	X3 / 5				Common
	X3 / 6		ALARM	MODUL_ALARM1	**Module 1 Alarm**
	X3 / 7				NO Alarm Condition
	X3 / 8				Common
	X3 / 9		ALARM	MODUL_ALARM2	**Module 2 Alarm**
	X3 / 10				NO Alarm Condition
X4	X4 / 1				Common
	X4 / 2		ALARM	MODUL_ALARM3	**Module 3 Alarm**
	X4 / 3				NO Alarm Condition
	X4 / 4				Common
	X4 / 5		ALARM	MODUL_ALARM4	**Module 4 Alarm**
	X4 / 6				NO Alarm Condition
	X4 / 7				Common
	X4 / 8		ALARM	MODUL_ALARM5	**Module 5 Alarm**
	X4 / 9				NO Alarm Condition
	X4 / 10				Common

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OPTIONS

- **Modem/Ethernet card or Modem/GSM card for PowerREPORTER remote monitoring**
- **SNMP card and Wavemon management software, Modbus protocol**
- **External battery cabinets**
- **Parallel bus for additional cabinets**
- **In/output transformer for special voltages**
- **battery chargers**
- **Temperature sensor for battery temperature control**

MODEM/ETHERNET CARD / PowerREPORTER MANAGEMENT SOFTWARE

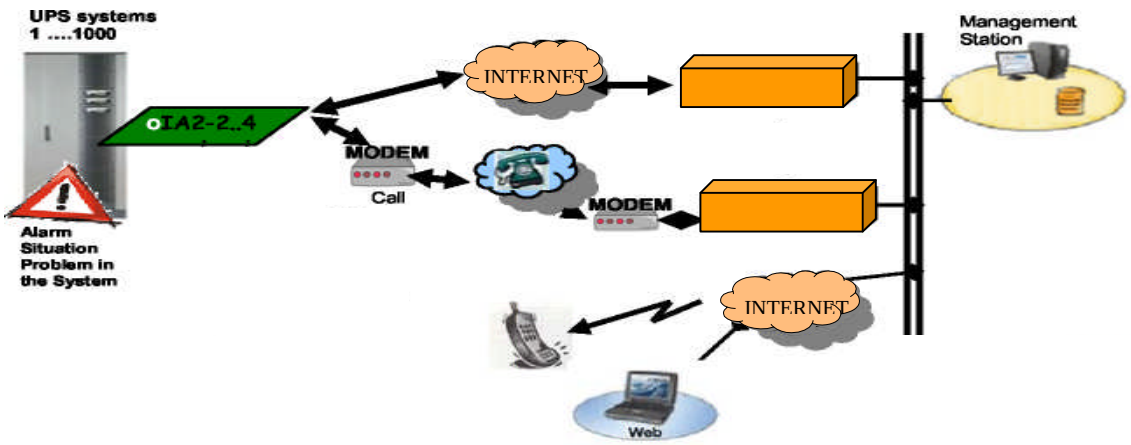
PowerREPORTER is a redundant remote monitoring and management service which is a part of the Premium Power Protection Concept. It offers peace-of-mind protection for mission critical applications by providing a continuous 24/7 monitoring service by our control centre. There are two different solution cards, Modem/Ethernet or Modem/GSM, to connect the UPS to the outside world.

Continuous monitoring is an affordable insurance policy to detect and warn of problems before they become a crisis.
Acquire key performance parameters and productivity information in real-time to empower you with the necessary details to better understand machine performance and troubleshoot downtime events faster.
Early warning system, so problems can be addressed before they become a real threat to the load.
Professional experts, your virtual remote service technician.
Total transparency of information and actions performed like notification of all critical status changes, coordination of equipment service, reporting of all alarms with priorities.

What are the features?
- Redundant and secure communication
- Alarm acknowledgment
- Priority driven management (with escalation)

Comprehensive Management System
- Reception and management of alarm calls from UPS
- Storage of UPS data in a database exportable in a CVS-format for easy handling in Excel
- Unlimited number of UPS that can be managed
- User administration with passwords and permission-level
- Administration of log file
- Data logging with statistical analysis and diagnostics report

Visualization of the UPS data:
- Current status (‘single’ and ‘parallel’ operation)
- Measured values for single or three phase
- Recording function including graphs with zooming capabilities for selected measured values
- Display of event log file
- Display of UPS parameters
- Web server functionality, for data access from any web browser



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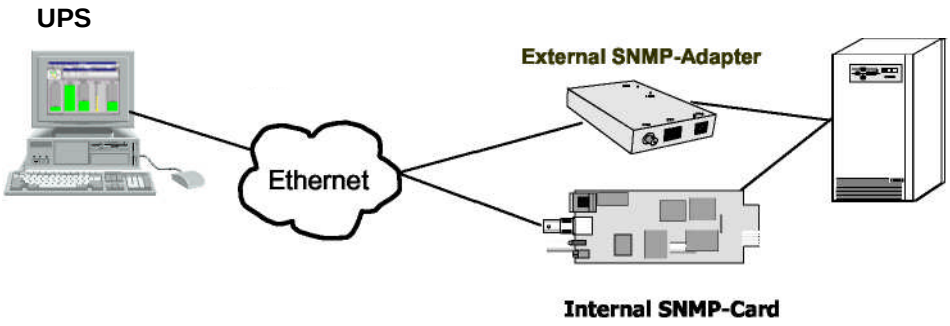
SNMP CARD / WAVEMON MANAGEMENT SOFTWARE

The Simple Network Management Protocol (SNMP) is a worldwide-standardized communication-protocol. It is used to monitor any device in the network via simple control language. The UPS-Management Software Wavemon also provides its data in this SNMP format with its internal software agent. The operating system you are using must support the SNMP protocol. We offer our Wavemon software with SNMP functionality for Novell, OS/2, and all Windows running on INTEL and ALPHA, DEC VMS, Apple. Two types of SNMP interfaces with identical functionality are available: an external SNMP adapter box and an internal SNMP card. Both can manage a parallel system (N modules) and return either global values - which are consistent for the U parallel system - or specific values from the single modules.



BATTERY CABINETS

		CBAT-DPA-120	CBAT-DPA-200
S Type - separate battery per module C Type - common battery			
Dimensions (w x d x h)	mm	730 x 800 x 1975	1200 x 800 x 1975
Weight with trays & without batteries	kg	290	410
Configuration accommodates:	Max.	120 battery blocks x 24Ah on 8 shelves 3 x 5 = 15 blocks/shelf	200 battery blocks x 24Ah on 7 shelves 6 x 5 = 30 blocks/shelf
Battery fuses / maximum strings		3 / 3	5 / 5
Terminals	S type	9 x 16/25 mm^2	15 x 16/25 mm^2
	C type	common connection bar 3 x (2xM8) + PE 2xM8	common connection bar 3 x (2xM10) + PE 2xM10
Fuse type (very fast acting)	A	3 x 100A	5 x 100A

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INSTALLATION AND PLANNING

Minimum Clearances

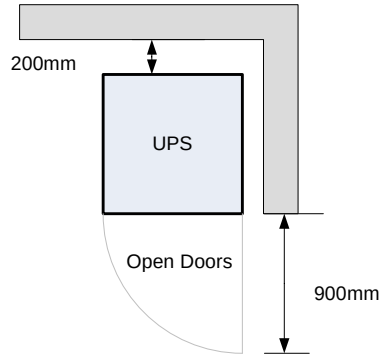

Figure 1: UPS space recommendation

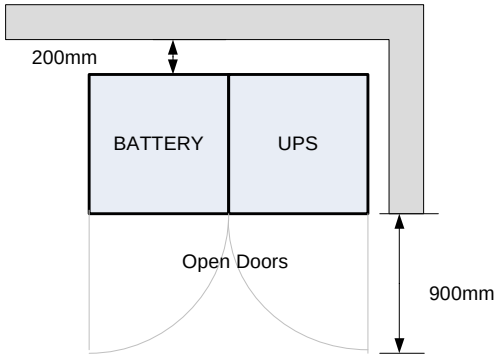

Figure 2: UPS + Battery space recommendation

UPS Cabinet (25kVA up to 125 kVA)	**SINGLE DPA-25**	**TRIPLE DPA-75**	**UPGRADE DPA-125**
Dimensions (w x d x h) mm	550 x 780 x 1650	550 x 780 x 1975	550 x 780 x 1975
UPS Cabinet (50kVA up to 250 kVA)	**SINGLE DPA-50**	**TRIPLE DPA-150**	**UPGRADE DPA-250**
Dimensions (w x d x h) mm	730 x 800 x 1650	730 x 780 x 1975	730 x 800 x 1975
Battery Cabinet		**CBAT DPA-120**	**CBAT DPA-200**
Dimensions (w x d x h) mm		730 x 800 x 1975	1200 x 800 x 1975
Accessibility	Totally front access for service and maintenance, no need for side, top or rear access		
Positioning	Minimum 200mm rear space required for cooling		
Input and Output Power Cabling	From the bottom, at the front		

MAXIMUM HEAT DISSIPATION PER MODULE WITH NON LINEAR LOAD

UPS Module		DPA 10	DPA 15	DPA 20	DPA 25	DPA 30	DPA 40	DPA 50
Heat dissipation with 100% non-linear load per module (EN 62040-1 -1:2003)	W	600	900	1200	1500	1670	2225	2780
	BTU	2047	3070	4094	5118	5698	7592	9485
Airflow (25° - 30°C) with non-linear load per module (EN 62040-1-1:2003)	m^3/h	150				380		

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WIRING AND BLOCK DIAGRAMS FOR ALL CABINETS AND MODULES

Uninterruptible Power Supplies Limited can offer a full 'turnkey' electrical installation service for the PowerWAVE 9000DPA. All work is undertaken in accordance with BS 7671 17th Edition standard and by NICEIC/ECA approved electrical contractors.

Alternatively a comprehensive installation manual is included with the UPS, which provides detailed electrical information to enable the customer's electrician or nominated electrical subcontractors to cable and connect the UPS.

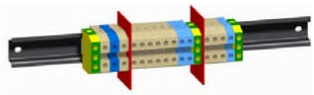
The following is general information regarding the recommended cable and fuse sizes for the PowerWAVE 9000DPA.

NOTE: The installation and connection of the batteries and the supply of the DC cabling (excluding the provision and laying of cable trays) is undertaken by our own trained service personnel.

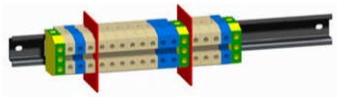
TERMINAL CONNECTIONS OVERVIEW

CABINET TYPE	Terminals or Connection Bar	**Input Bypass** 3+N	**Input Rectifier** 3+N+PE	**Output load** 3+N+PE
SINGLE DPA-25	T	4 x 10/16mm^2	5 x 10/16mm^2	5 x 10/16mm^2
TRIPLE DPA-75	T	4 x 35/50mm^2	4 x 35/50mm^2 +PE 50 mm^2	4 x 35/50mm^2 +PE 50 mm^2
UPGRADE DPA-125	T	4 x 70/95mm^2	4 x 70/95mm^2 + PE 50mm^2	4 x 70/95mm^2 + PE 50mm^2
SINGLE DPA-50	T	4 x 16/25mm^2	5 x 16/25mm^2	5 x 16/25mm^2
TRIPLE DPA-150	B	3 x M10 + PE 1 x M10	4 x M10 + PE 1 x M10	4 x M10 + PE 1 x M10
UPGRADE DPA-250	B	3 x M12 + PE 1 x M12	4 x M12 + PE 1 x M12	4 x M12 + PE 1 x M12

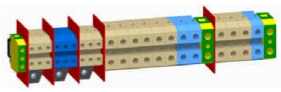
SINGLE DPA-25



SINGLE DPA-50

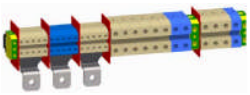


TRIPLE DPA-75

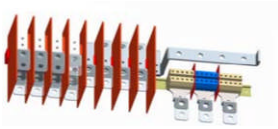


TRIPLE DPA-150

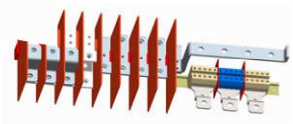
UPGRADE DPA-125



UPGRADE DPA-250



Dual Feed Input



Single Feed input

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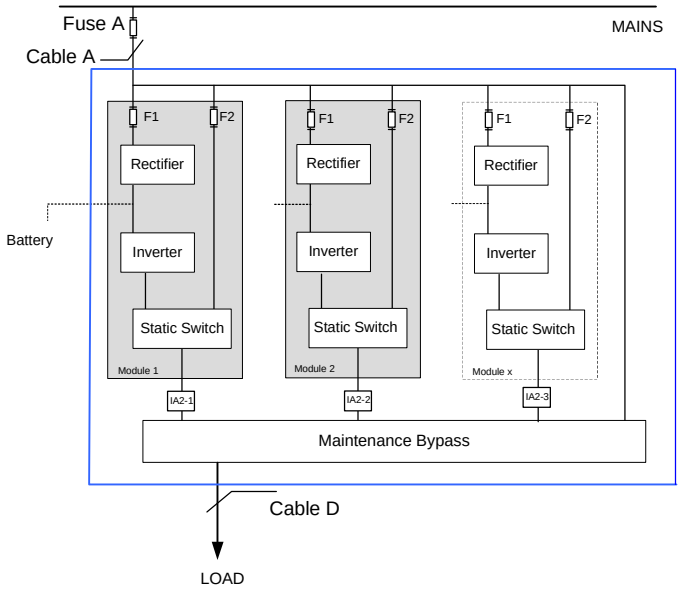
SINGLE FEED INPUT

Recommended Cable Sections and Fuse Ratings

SINGLE INPUT FEED - STANDARD VERSION



Cabinet	Maximum Load kVA cosφ 0.8	Input 3 x 400V			Output 3 x 400V cosφ 0.8	
		Fuse A (A)	Cable A (mm^2) (IEC 60950-1:2001)	Maximum input current with battery charging (A)	Cable D (mm^2) (IEC 60950-1:2001)	I nom (A)
SINGLE DPA-25	25	3 x 63	5 x10	34	5 x 10	36
TRIPLE DPA-75	75	3 x 125	5 x 50	101	5 x 50	108
UPGRADE DPA-125	125	3 x 225	5 x 95	169	5 x 95	181
SINGLE DPA50	50	3 x 100	5 x 25	67	5 x 25	72
TRIPLE DPA-150	150	3 x 250	5 x 120 or 5 x (2 x 50)	202	5 x 120 or 5 x (2 x 50)	218
UPGRADE DPA-250	250	3 x 400	5 x (2 x 95)	337	5 x (2 x 95)	362

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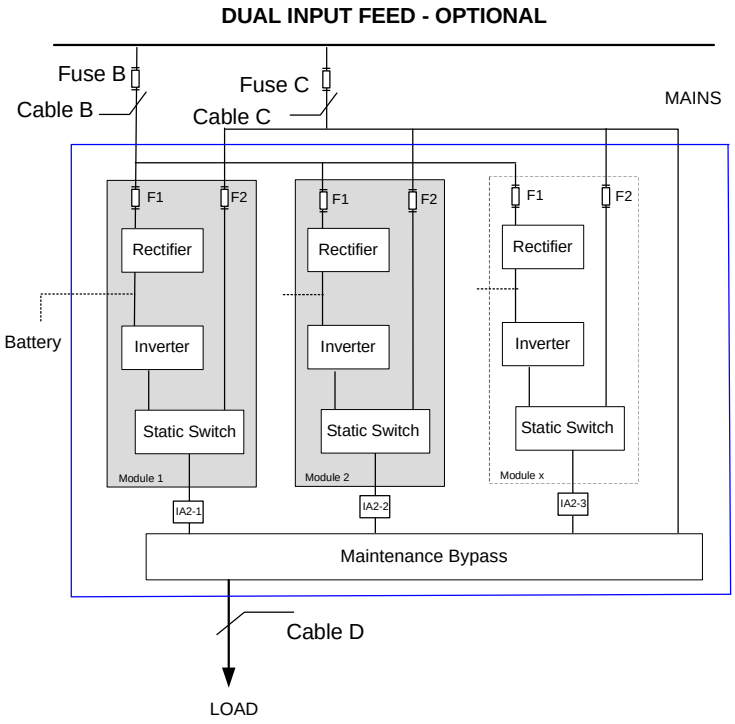
DUAL FEED INPUT

Recommended Cable Sections and Fuse Ratings



Cabinet type	Maximum Load kVA cosφ 0.8	Input 3 x 400V			Bypass 3 x 400V		Output 3 x 400V cosφ 0.8	
		Fuse B (A)	Cable B (mm^2) (IEC60950-1:2001)	Maximum input current with battery charging (A)	Fuse C (A)	Cable C (mm^2) (IEC60950-1:2001)	Cable D (mm^2) (IEC60950-1:2001)	I nom (A)
SINGLE DPA-25	25	3 x 63	5 x10	34	3 x 63	4 x 10	5 x10	36
TRIPLE DPA-75	75	3 x125	5 x 50	101	3 x 125	4 x 50	5 x 50	108
UPGRADE DPA-125	125	3 x 225	5 x 95	169	3 x 225	4 x 95	5 x 95	181
SINGLE DPA50	50	3 x 100	5 x 25	67	3 x 100	4 x 25	5 x 25	72
TRIPLE DPA-150	150	3 x 250	5 x120 or 5 x (2x50)	202	3 x 250	4x120 or 4x(2x50)	5 x120 or 5 x (2x50)	218
UPGRADE DPA-250	250	3 x 400	5 x (2 x 95)	337	3 x 400	4 x (2 x 95)	5 x (2 x 95)	362

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